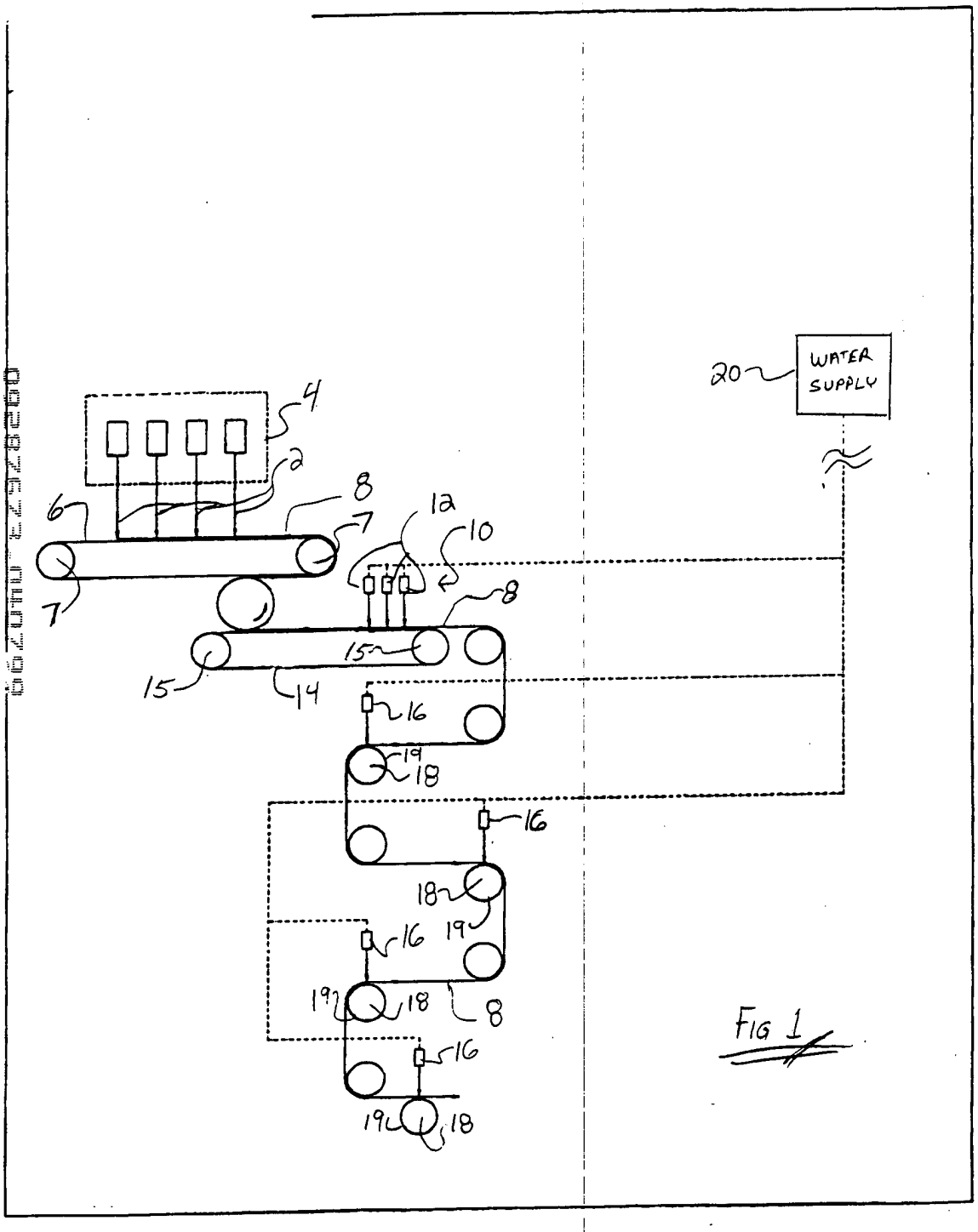

FIG 1

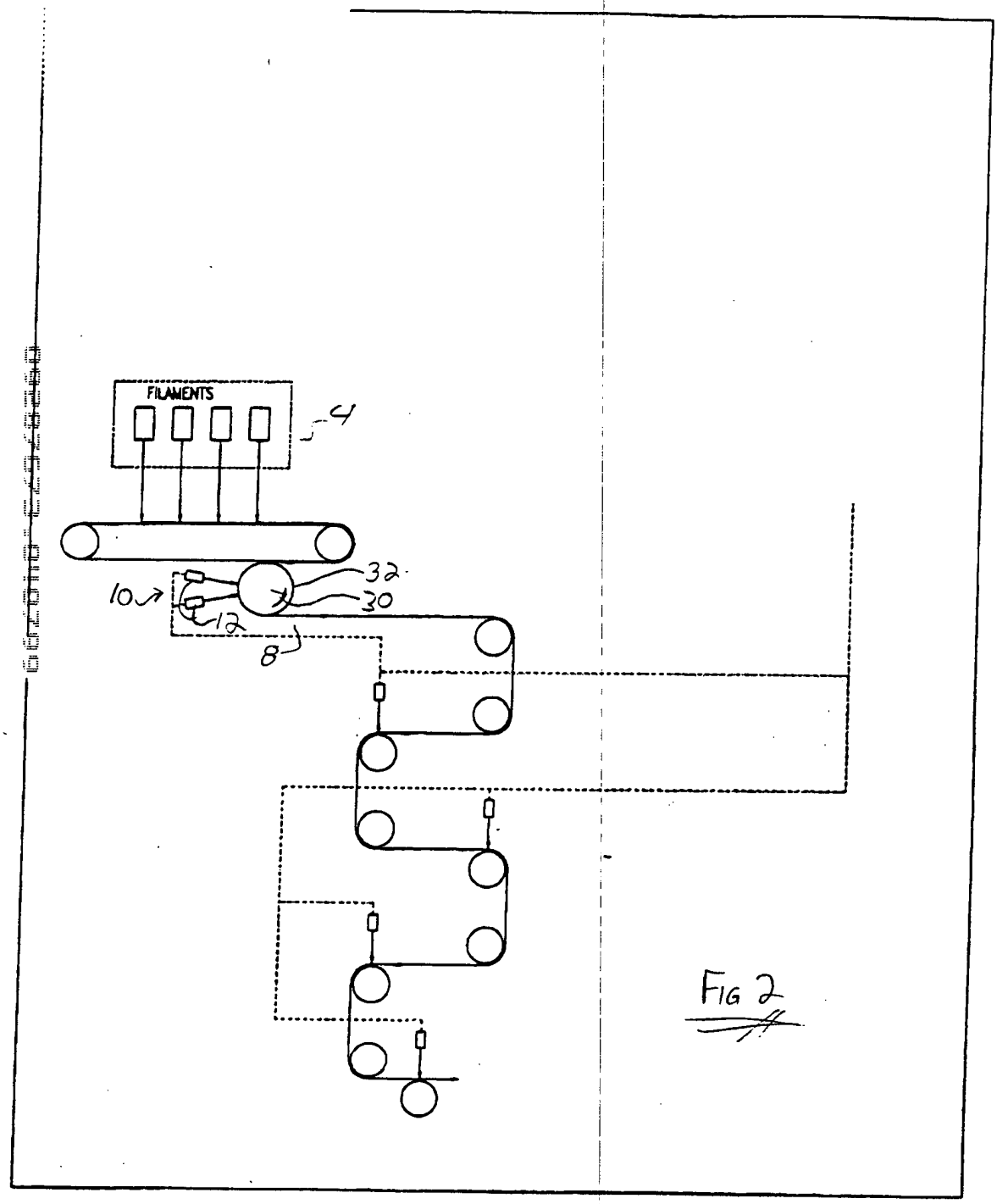

FIG 2

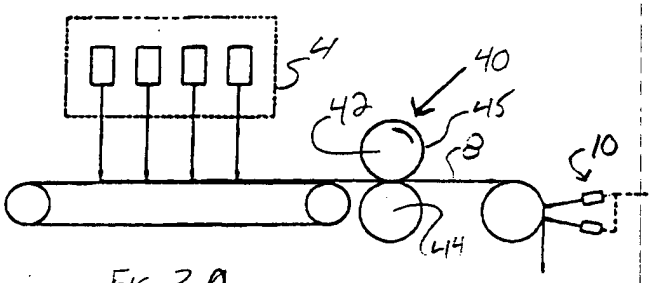

FIG 3A

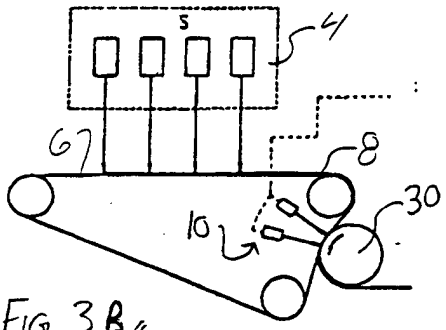

FIG 3B

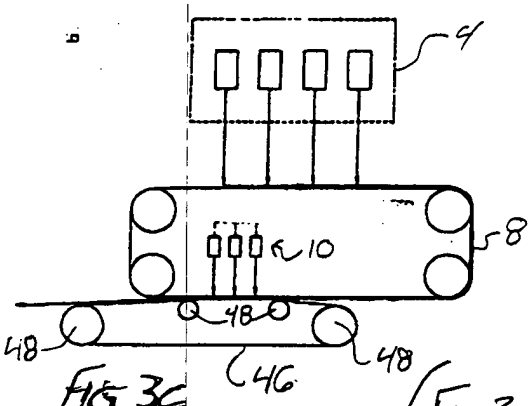

FIG 3C

(FIG 3E)

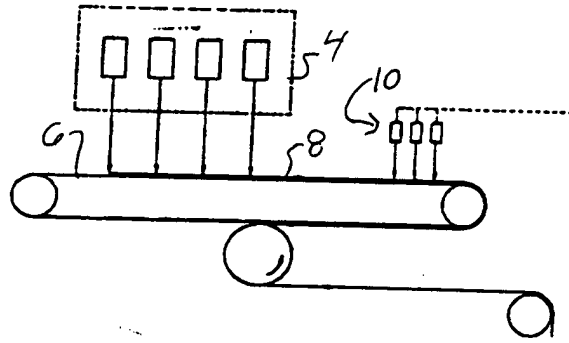

FIG 3A

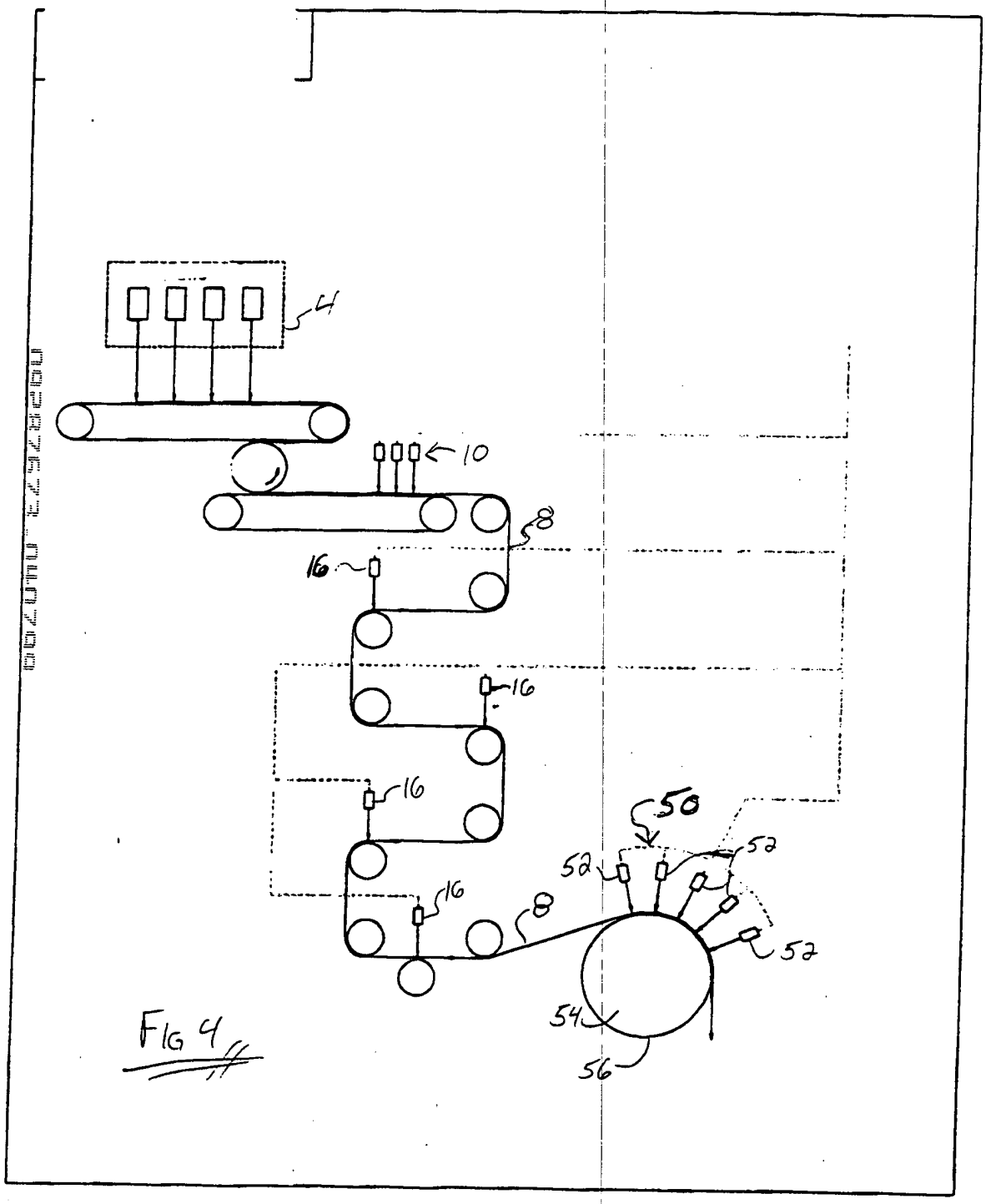

FIG 4

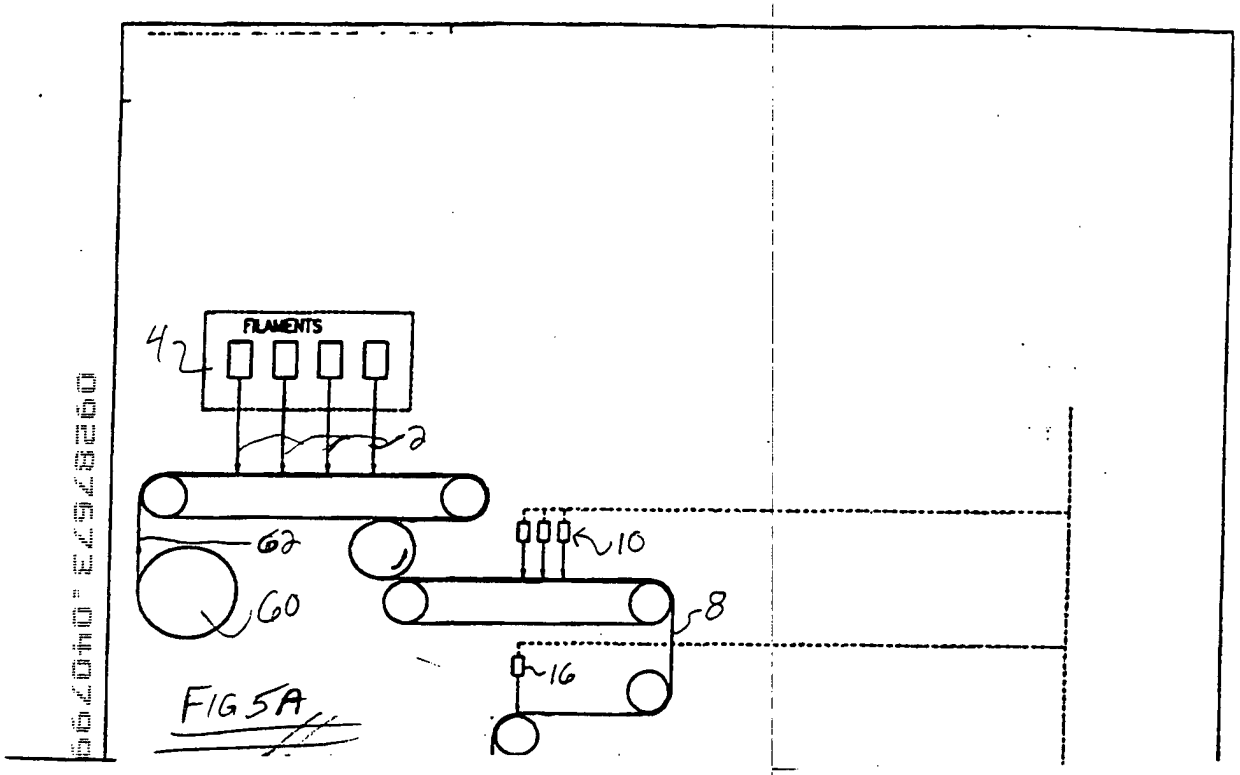

FIG 5A

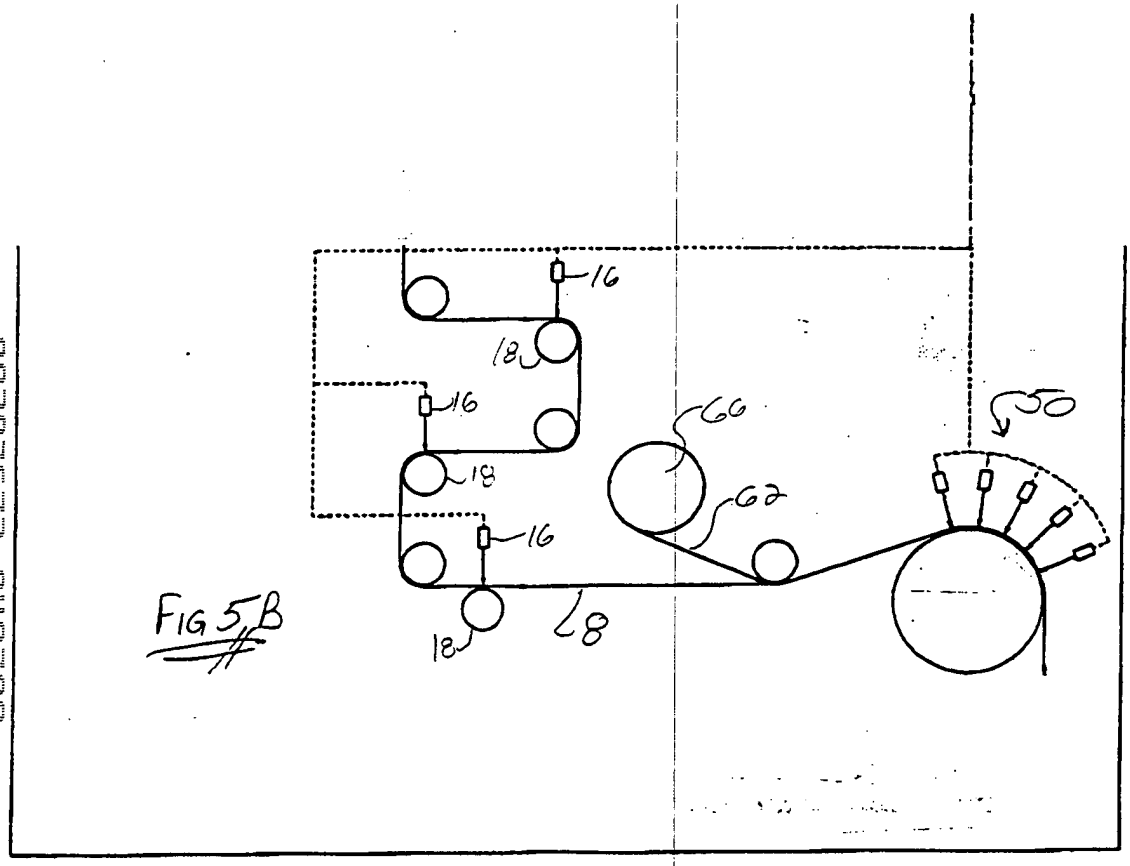

FIG 5B

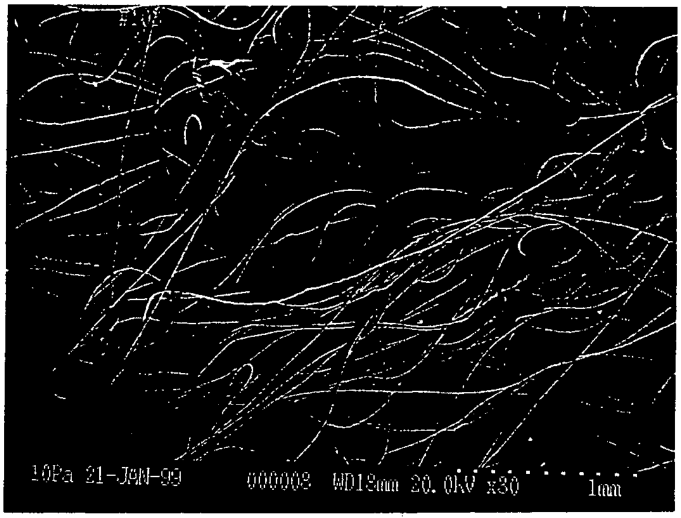

Figure 6

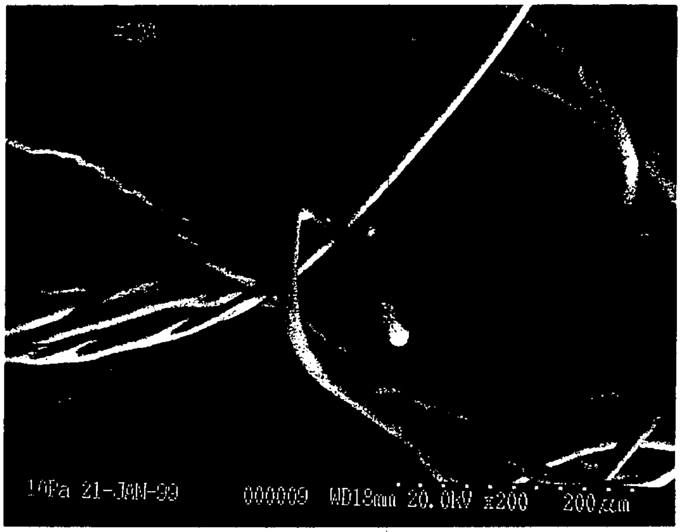

Figure 7

Figure 8: Prior Art

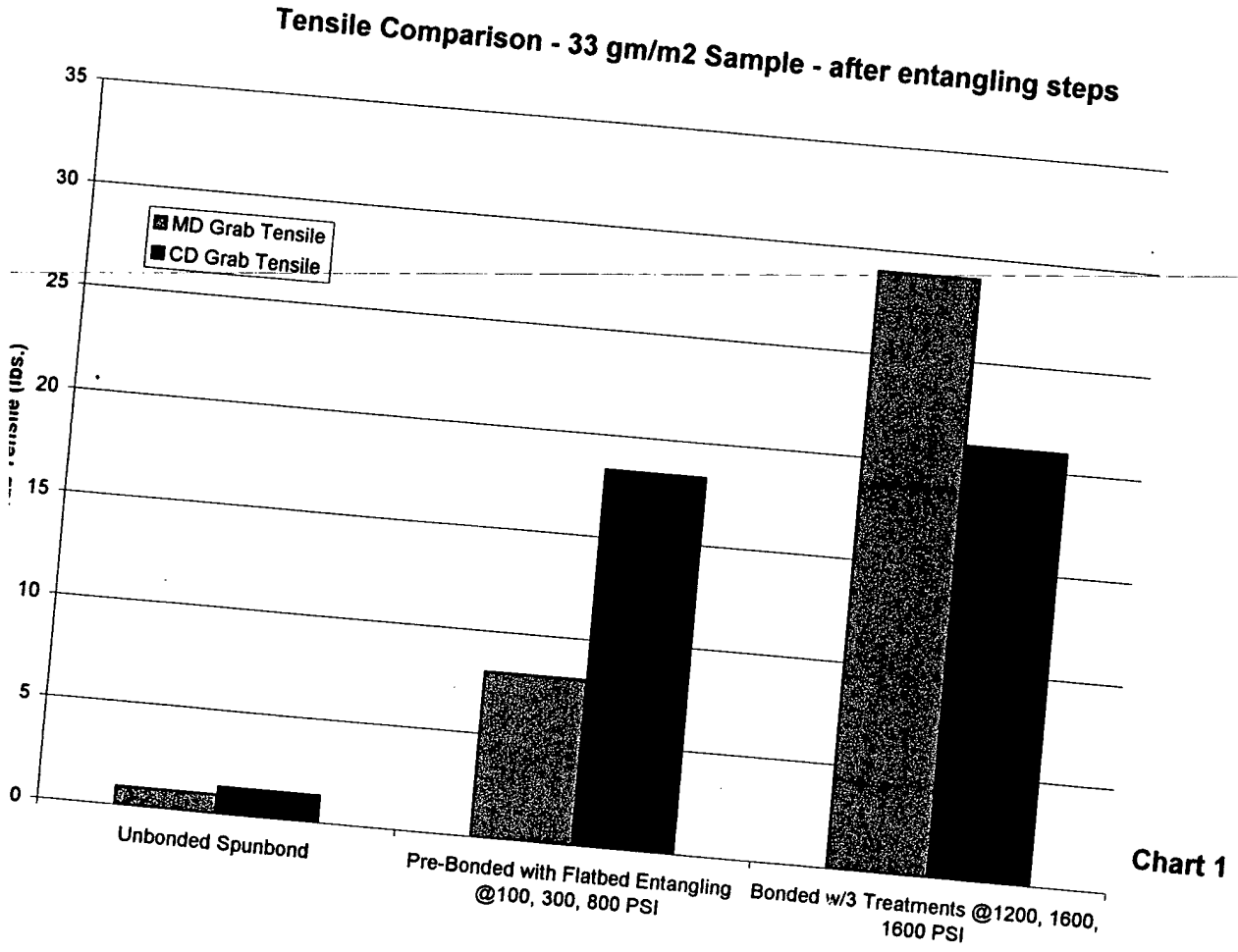

Chart 1

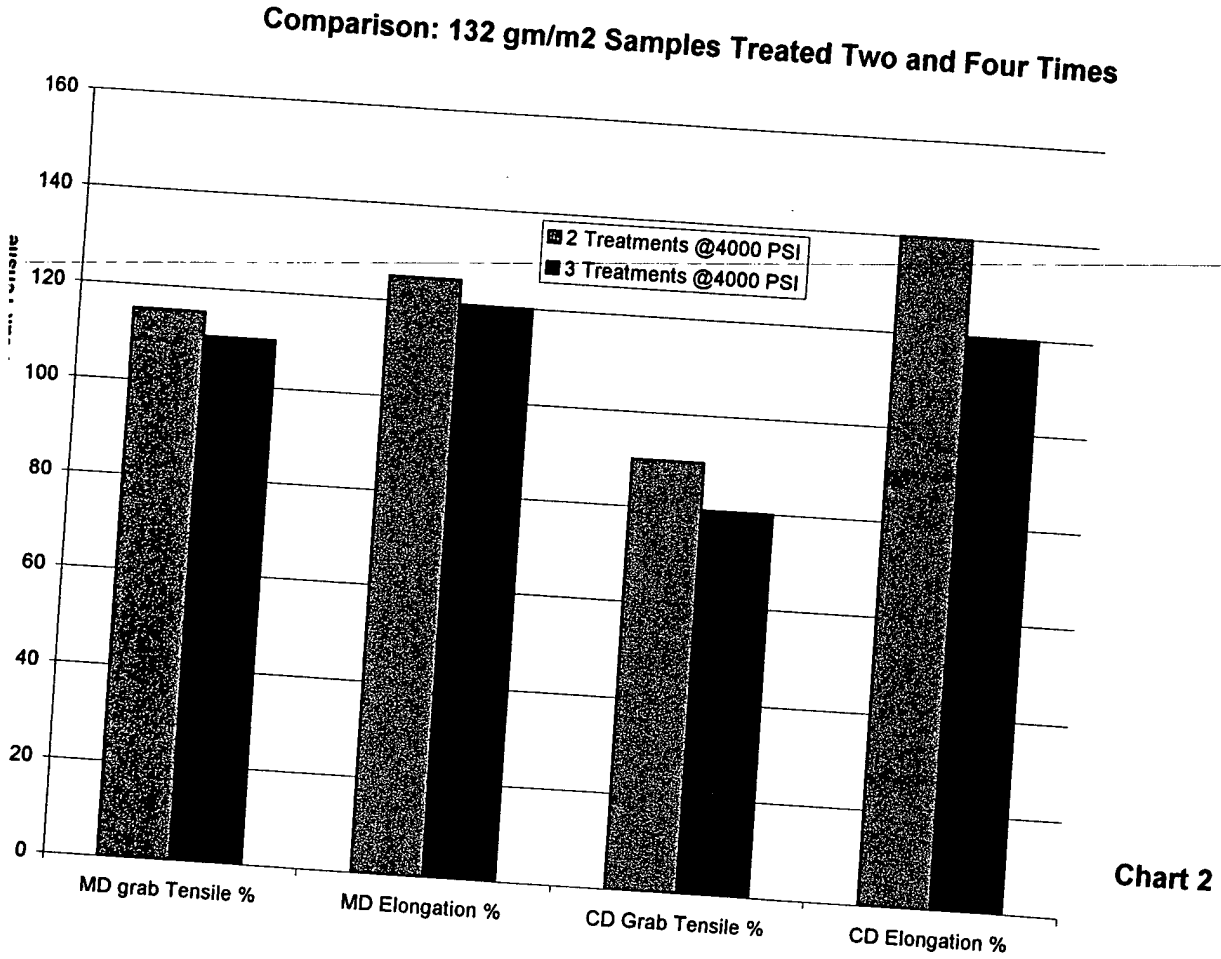

Chart 2

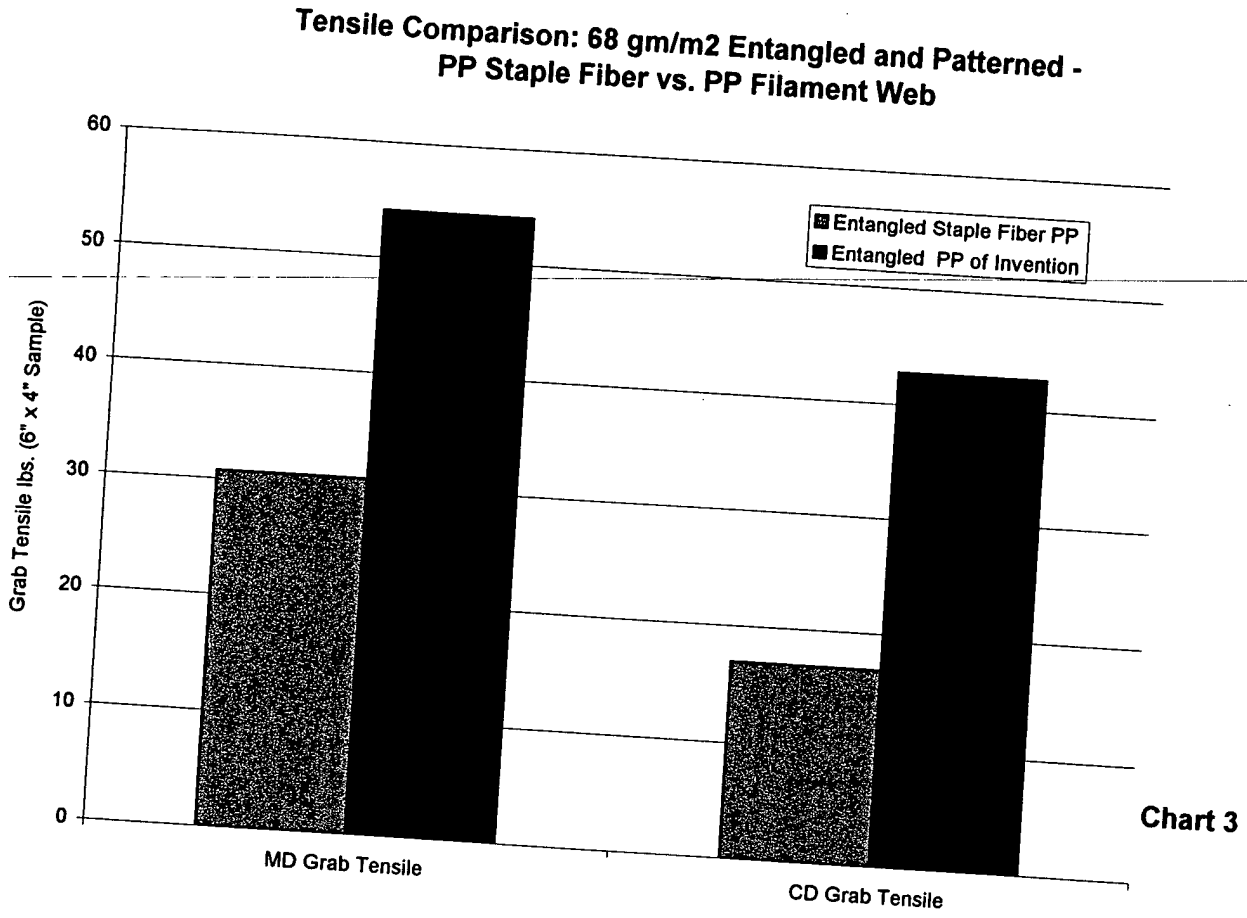

Chart 3

TABLE I:
Spinlace Analysis
Fabric properties vs. Control Fabrics

type	basis weight	denier	water jets process/pattern	jet pressure Pre-entanglement Jets 1-3: 1	2	3	Entanglement Jets 4-6: 4	5	6	total energy HP-hr/lb.	Entanglement completeness	frequency	Fiber interlock	Grab Tensile CD	MD	Trap Tear CD	MD	Abrasion cycles	Strip Tensile, # CD	MD	Elongation CD	MD	Density g/cm^3
TBCW	34	2.2									1.04	45.43	9.66	10	22	3	9	54	1	5	58	49	0.14
TBCW	68	2.2									0.96	52.03	19.15	25	37	7	15	18	4	7	52	61	0.45
Spinlace	34	1.67	flatbed & roll	100	1200	1200	800	1600	1600	1.1	0.85	34.4	49.29	29	50	16	25	40	4	13	118	117	0.06
Spinlace	34	1.67	Apex 33x28							1.8	1.17	11.80	45.22										0.08
Spinlace	68	1.67	flatbed & roll	100	1600	1600	1600	1600	1600	0.7	1.18	9.72	40.42	81	118	34	55		2.9	4.9	137	120	0.17
Spinlace	68	3	tricot sleeve							1.9	1.1	9.91	41.3						6	14			0.08
Spinlace	68	3	flatbed & roll	100	1600	1600	1600	1600	1600	0.7	1.18	12.48	21.34						5.8	6.8			0.06
Spinlace	100	3	tricot sleeve							1.9	1.1	13.38	36.13						2.1	4			0.06
Spinlace	100	3	flatbed & roll	100	1600	1700	1700	1700	1700	0.5	1.12	13.91	19.7						2.4	8.2			0.06
SB	34	1.67	NCSU sleeve							1.9	1.13	14.22	20.19						4.37	5.8			0.07
SB	68	1.67																	4.8	8.3			0.07
HET	34	2.2	flatbed & roll	100	800	1200	800	1600	1600		0.98	103.89	37.33	24	47	4	9	36	3	10	39	37	0.15
HET	34	2.2	Apex 33x28								0.79	28.36	32.48	32	51	14	24	10	3	8	33	20	0.82
HET	68	2.2	flatbed & roll	100	800	1200	1600	1600	1600		0.58	19.07	17.42	10	20	6	11	28	1	5	127	103	0.05
HET	68	2.2	tricot sleeve								1.15	16.33	21.09						1.01	2.35			0.06
											0.96	17.45	22.21	42	58	8	16	6	3	8	128	111	0.18
											1.13	19.54	25.93						2.9	3.8			0.06

TBCW = thermally point bonded carded webs
Spinlace = water jet entangled continuous filament webs
SB = thermally point bonds spunbond
HET = hydroentangled carded staple fiber webs